

## TANGIBLE RESULT #4

# Deliver Transportation Solutions and Services of Great Value



MDOT will deliver transportation solutions on time and within budget. The Department will use strategies to ensure that the transportation solution meets the needs of customers and eliminates unnecessary costs.

### RESULT DRIVER:

Jason Ridgway

*State Highway Administration (SHA)*

# Deliver Transportation Solutions and Services of Great Value

## TANGIBLE RESULT DRIVER:

Jason Ridgway

State Highway Administration (SHA)

## PERFORMANCE MEASURE DRIVER:

Natalie Grasso

Motor Vehicle Administration (MVA)

## PURPOSE OF MEASURE:

To gauge the accuracy of capital project estimates to manage the Departments Capital Program more efficiently.

## FREQUENCY:

Annually (In October)

## DATA COLLECTION METHODOLOGY:

Through the Capital Program Management System (CPMS); the CTP; TSO & TBU's Procurement Offices.

## NATIONAL BENCHMARK:

+/- 5% This mirrors the benchmark as reported by Nebraska's Dept. of Roads, Fiscal Responsibility for the Accuracy of Project Estimates. Further, while MDOT has not specified a benchmark per se, they use Nebraska's 5% as the bench for the best.

Note: This benchmark applies to capital construction projects. So far and with extensive research, we have been unable to find a benchmark for IT projects.

## PERFORMANCE MEASURE 4.1

### Percent of Estimated Project Budget as Compared to Final Project Award

This performance measure fosters more accuracy and better budget management of the State's limited transportation funding. Accurate estimating enables MDOT to provide better services to its customers, whether it is infrastructure improvements to State roadways and bridges; increasing and retaining the commerce going in and out of the Port of Baltimore; attracting and retaining airlines and travelers at BWI Marshall; providing more alternative service options to Maryland citizens to conduct their MVA transaction remotely; or improving transit services throughout the State.

Given the diverse differences between construction and IT projects, we have separated into two categories with specific budget parameters:

- \$ 1M+ construction type projects: SHA, MDTA MPA, MAA and MTA
- \$400K+ IT projects: TSO and MVA

For FYs 2014, 2015 and 2016, the range in variance between estimated project budgets and final project awards was from 4.7 percent to 7.6 percent. While the range is within the +/- 5 percent and the estimates vs award are very good, the goal is to continue working on strategies to obtain the +/- 5 percent consistently.

To improve the outcomes of this measure, MDOT is engaged in the following activities:

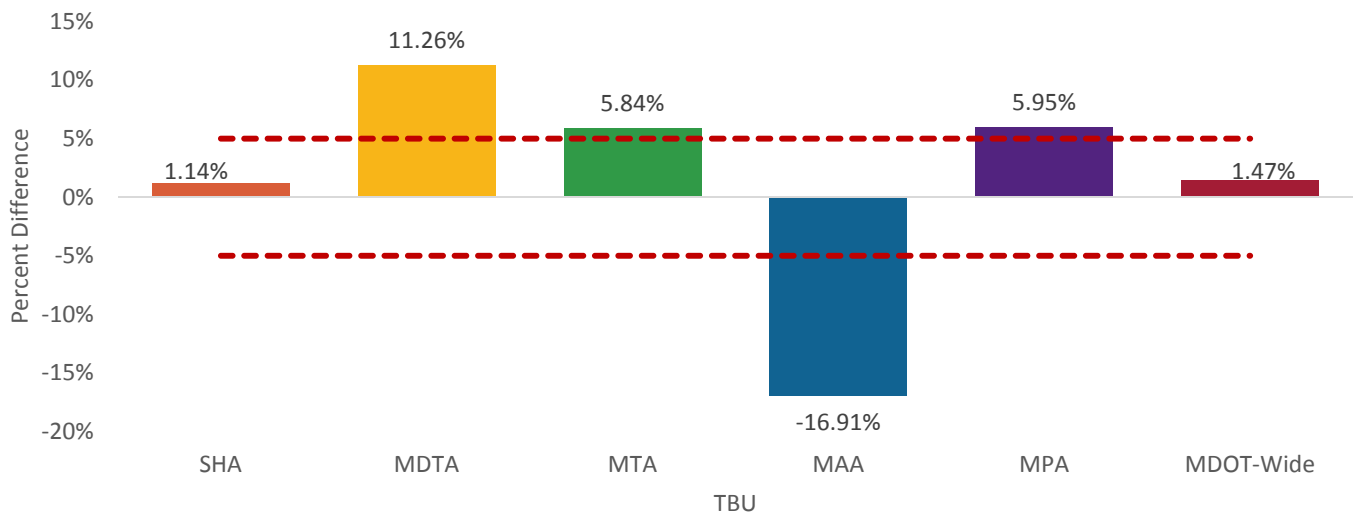
- Team expansion with subject matter experts (SMEs) from each TBU;
- Usage of estimating manual;
- Creation of excel spreadsheet to ensure consistency in gathering data for PM 4.1 - PM 4.3;
- Clarifying definitions with TBUs; and
- Modified dataset for construction contracts to \$1M (MAA, SHA, MDTA, MPA and MTA).

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## PERFORMANCE MEASURE 4.1

### Percent of Estimated Project Budget as Compared to Final Project Award

Chart 4.1.1: Percent of Estimated Project Budget as Compared to Final Project Award FY2017



TBU	SHA	MDTA	MTA	MAA	MPA	MDOT-Wide
Award	1,029,051,170	177,924,428	29,519,407	88,001,987	17,724,902	1,342,221,894
Estimate	1,040,811,704	197,953,784	31,242,017	73,116,662	18,778,936	1,361,903,103

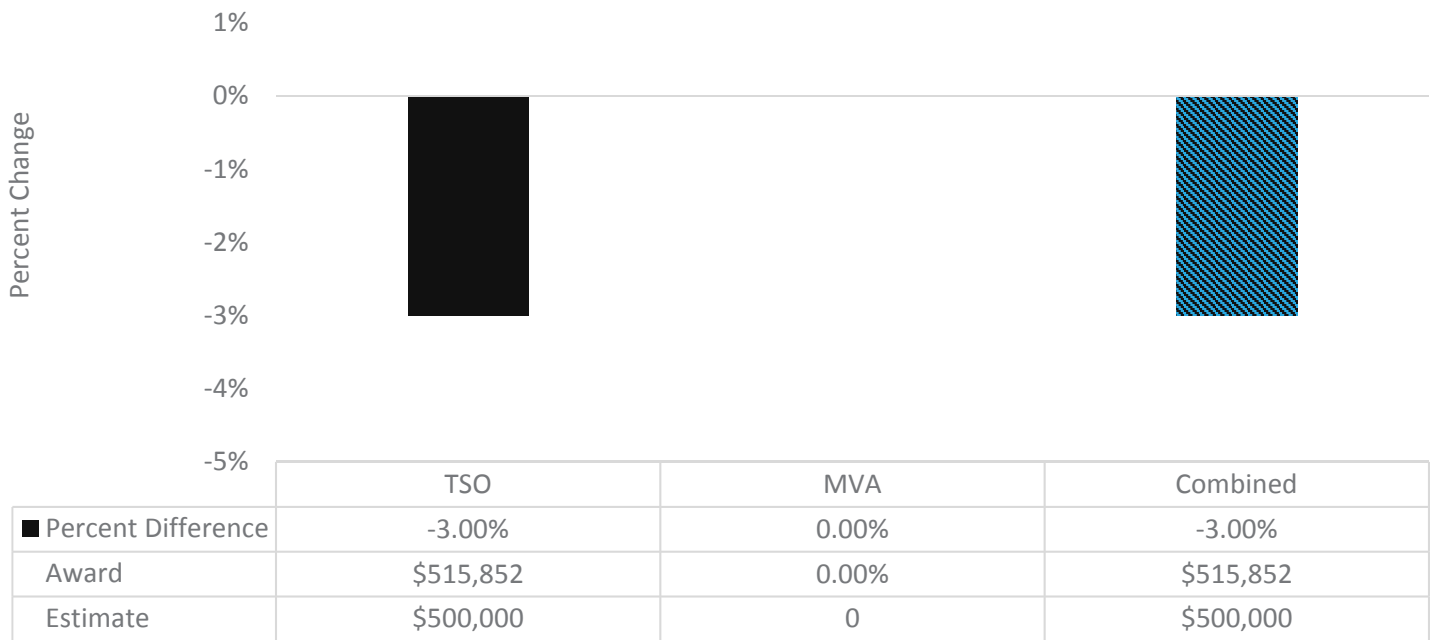
■ Percent Difference    - - - Benchmark (High): 5%    - - - Benchmark (Low): -5%

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## PERFORMANCE MEASURE 4.1

### Percent of Estimated Project Budget as Compared to Final Project Award

Chart 4.1.2: Percent of Estimated Project Budget as Compared to Final Project Award TSO and MVA FY2017



# Deliver Transportation Solutions and Services of Great Value

## **TANGIBLE RESULT DRIVER:**

Jason Ridgway

*State Highway Administration (SHA)*

## **PERFORMANCE MEASURE DRIVER:**

Brian Miller

*Maryland Port Administration (MPA)*

## **PURPOSE OF MEASURE:**

To measure the difference in the contract amount from NTP to final contractor payout.

## **FREQUENCY:**

Annually

## **DATA COLLECTION METHODOLOGY:**

Collect data from MDOT TBU's for FYs 2013 to 2016. Data will reflect contracts that closed out in each respective fiscal year. Data will be reflected in a bar graph for each fiscal year.

## **NATIONAL BENCHMARK:**

2%

## **PERFORMANCE MEASURE 4.2**

### Percent of Change for Finalized Contracts

It is important to assess how well we manage the budgeted and awarded amount during the duration of Department contracts. This is done to ensure we are getting what we paid for and not adding unnecessary or unbudgeted costs to our transportation projects. This will facilitate better contract performance and better management of contracts which will add overall value to the project and ensure worthwhile expenditures of taxpayer dollars.

Strategy development meetings have been held with TBU representatives throughout the reporting year to review data and address any issues that exist in order to meet the 2 percent benchmark for compliance. Data for FY2017 illustrates a collective effort for benchmark compliance by TBU. This is reflected for FY2017 by TBU compliance across the board.

Issue that could arise as this TR moves forward would be contracts that exceed the award amount by 2 percent at final payout.

TBUs will have to monitor contracts and justify overages through contract changes and justifications for those changes.

Individual TBUs may not have data from a fiscal year if no contract(s) closed during the respective fiscal year.

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## PERFORMANCE MEASURE 4.2

### Percent of Change for Finalized Contracts

Chart 4.2.1: Percent Change for Finalized Contracts by TBU FY2014

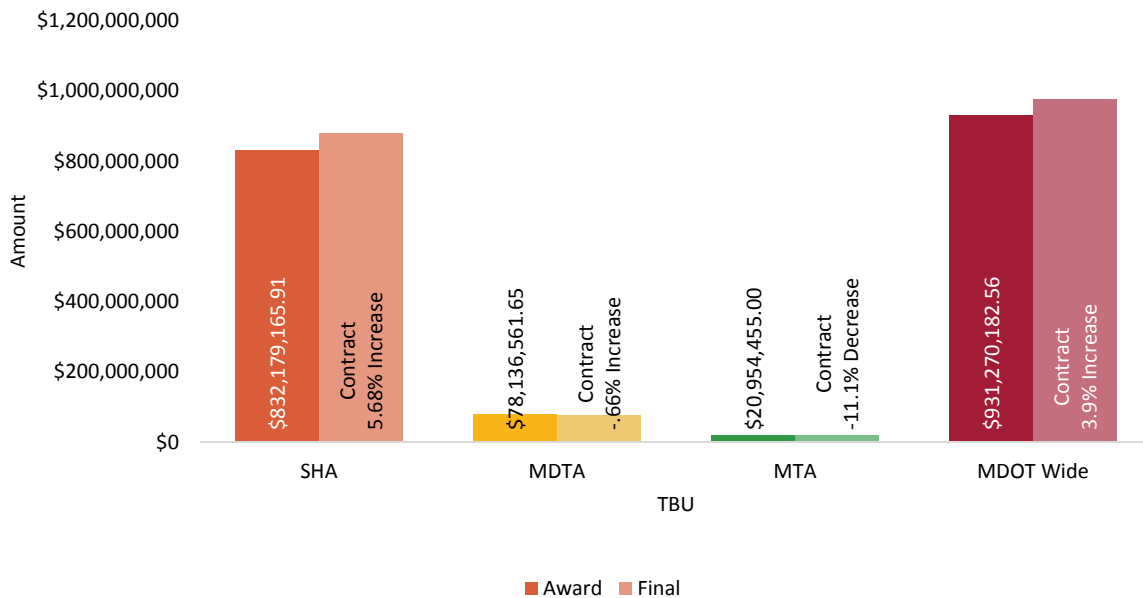
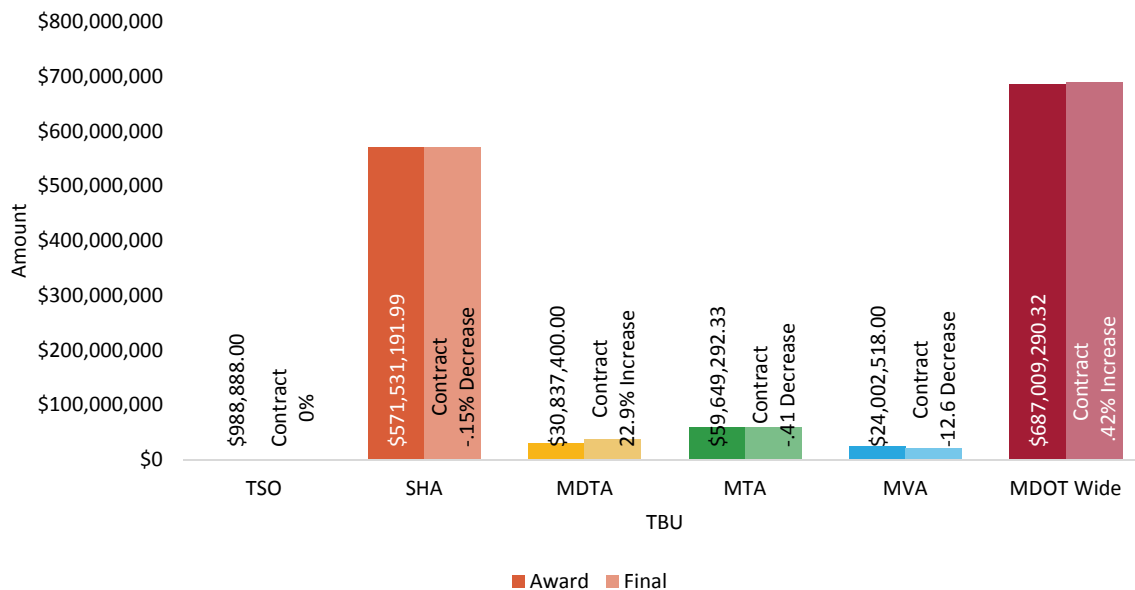


Chart 4.2.2: Percent Change for Finalized Contracts by TBU FY2015





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## PERFORMANCE MEASURE 4.2

### Percent of Change for Finalized Contracts

Chart 4.2.3: Percent Change for Finalized Contracts by TBU FY2016

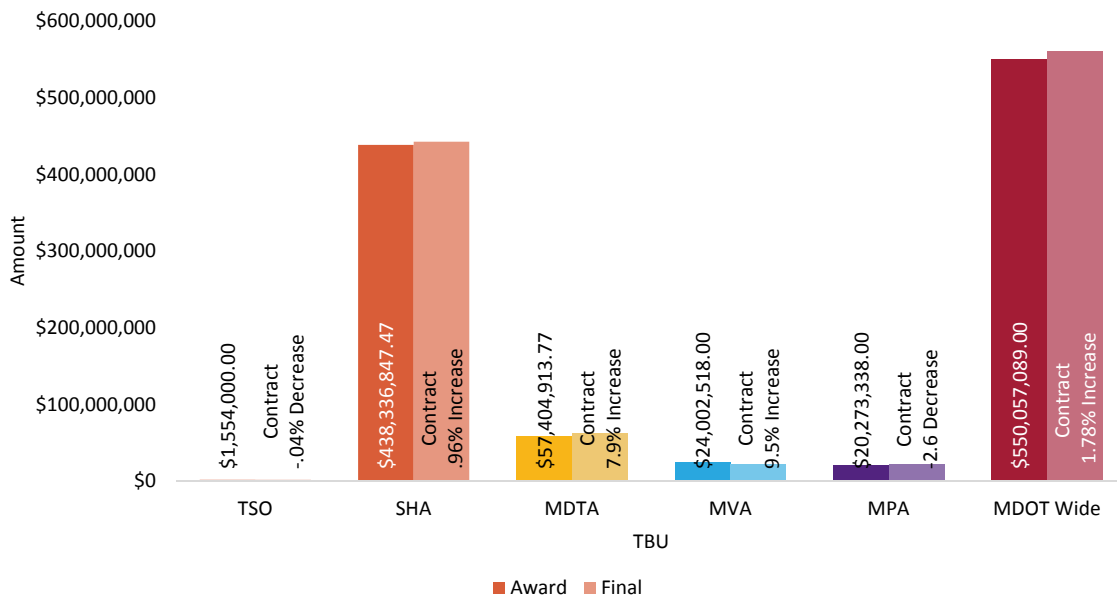
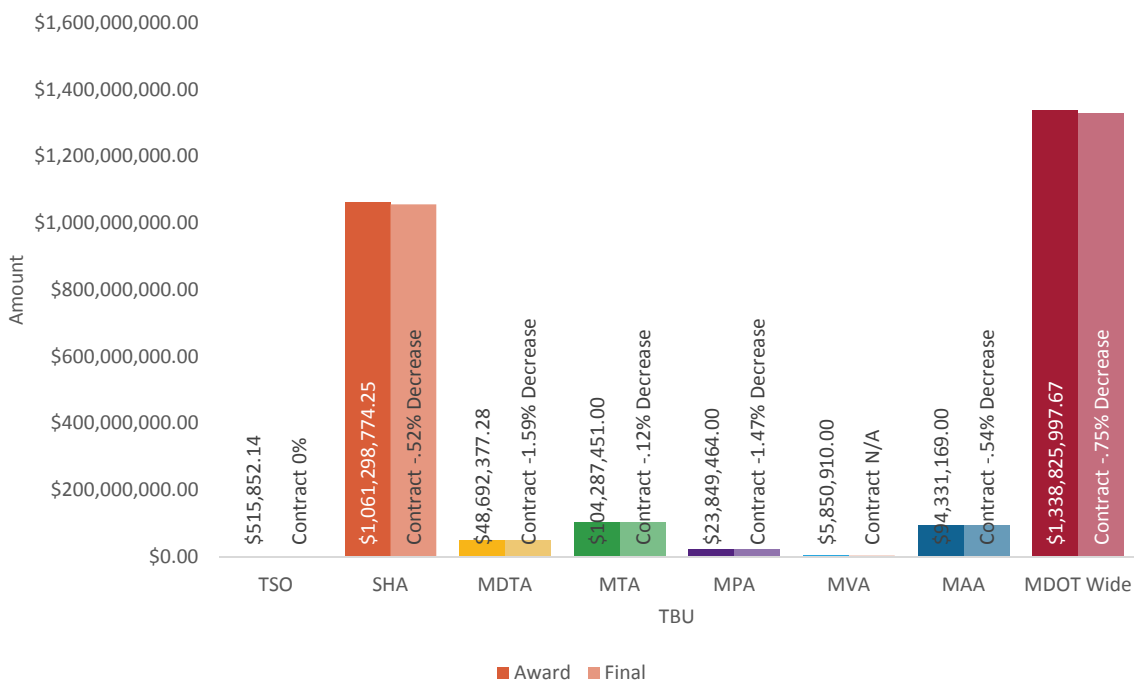


Chart 4.2.4: Percent Change for Finalized Contracts by TBU FY2017



# Deliver Transportation Solutions and Services of Great Value

## TANGIBLE RESULT DRIVER:

Jason Ridgway

*State Highway Administration (SHA)*

## PERFORMANCE MEASURE DRIVER:

Bill Appold

*The Secretary's Office (TSO)*

## PURPOSE OF MEASURE:

To determine if MDOT is efficiently managing and delivering contracts and services.

## FREQUENCY:

Annually (in October)

## DATA COLLECTION METHODOLOGY:

Information will be provided by the MDOT Offices of Construction, Planning and Finance.

## NATIONAL BENCHMARK:

87%

## PERFORMANCE MEASURE 4.3

### On-time Services and Solutions: Percent of Projects Completed by Original Contract Date

When MDOT awards a contract or agrees to provide a service, it establishes a commitment date which is the date the contract or service begins providing benefits to MDOT's stakeholders.

The purpose of this performance measure is to track MDOT's accuracy in estimating if contracts and services committed to are completed and open to service by the commitment date specified in the contract. The performance measure will also determine if there are common factors that make contracts go over their budgeted time and whether these factors can be mitigated.

Overall MDOT increased the percentage of contracts completed in a timely basis from 56 percent in FY2015 and 60 percent in FY2016 to a FY2017 total of 71 percent. This is largely due to a new standard that measures project completion based on when our stakeholders start receiving "beneficial use" from the project. This aligns with MDOT's focus on its customers.

Another reason for the improved performance is the adoption of strategies designed to limit delays in the completion of contracts. These strategies include the implementation of A + B Bidding and Time of Year Letting strategies as well as a lessons learned process post-completion and a having design changes undergo administrator review and approval.

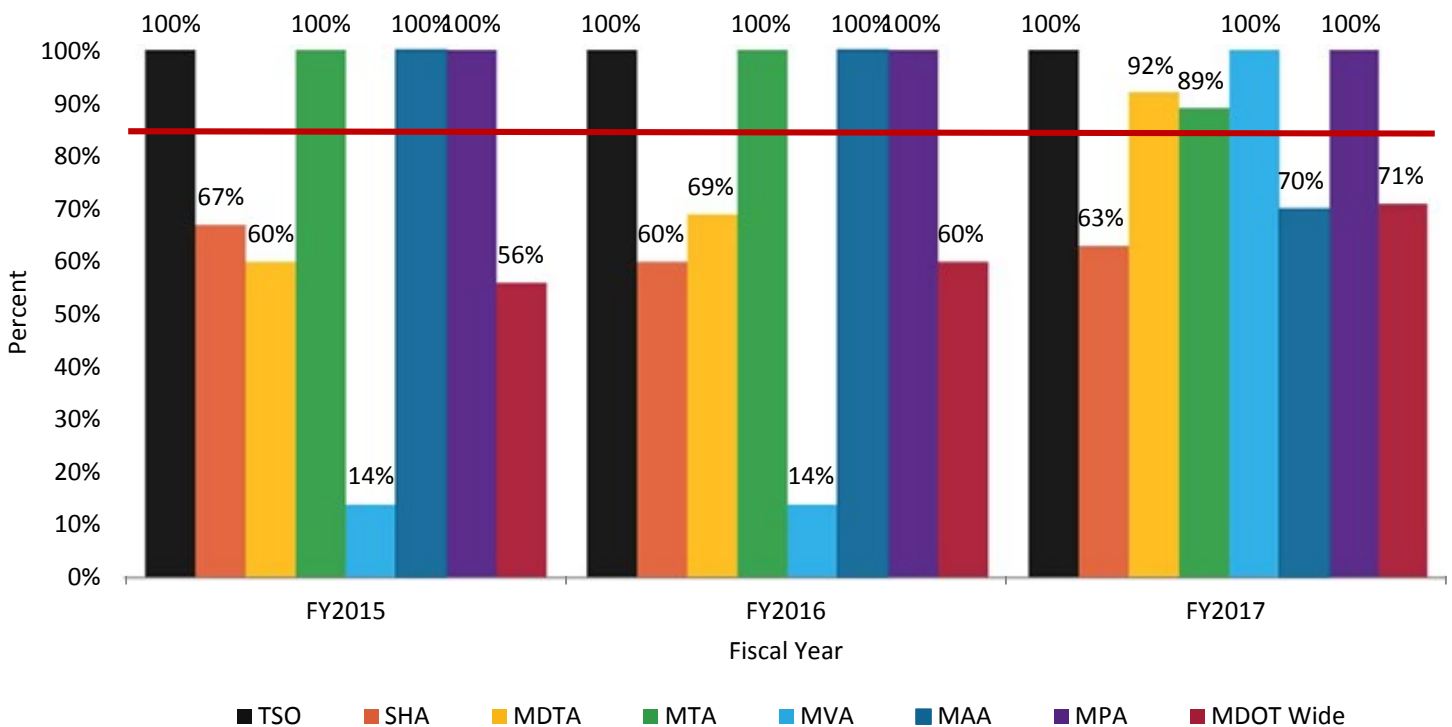


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## PERFORMANCE MEASURE 4.3

### On-time Services and Solutions: Percent of Projects Completed by Original Contract Date

Chart 4.3.1: On-Time Services and Solutions, Percent of Projects Completed by Original Contract Date FY2015-FY2017



# Deliver Transportation Solutions and Services of Great Value

## TANGIBLE RESULT DRIVER:

Jason Ridgway

*State Highway Administration (SHA)*

## PERFORMANCE MEASURE DRIVER:

Ross Turlington

*Maryland Transit Administration (MTA)*

Jim Harkness

*Maryland Transportation Authority (MDTA)*

Shawn Ames

*Maryland Aviation Administration (MAA)*

## PURPOSE OF MEASURE:

To track the average cost of common transportation services and solutions to make decisions as to where to reduce costs, as appropriate.

## FREQUENCY:

Annually (in January and July)

## DATA COLLECTION METHODOLOGY:

Through the Capital Program Management System (CPMS); CTP; and MDOT Capital Budget, Finance and Procurement Offices.

## NATIONAL BENCHMARK:

N/A

## PERFORMANCE MEASURE 4.4

### Average Cost of Common Transportation Solutions and Services

It is MDOT's responsibility to provide transportation solutions and services to the public that are of great value.

The purpose of these measures is to track, access, and analyze data that will help reveal solutions for reducing the cost of transportation services. Tracking data that is grouped by shared services across business units will allow comparison across TBUs, and also insight into ways to reduce the cost of services to the public.

Performance measure 4.4 has 10 separate measurements. These measurements include minor and major road resurfacing cost, interstate road resurfacing cost, bridge replacement cost and major bridge redecking cost. Other measurements include operating cost per passenger trip, operating cost per revenue vehicle mile, passenger trips per revenue vehicle mile, farebox recovery and cost per transaction.

Tracking of these measures is based upon actual costs associated with contracts issued for various road and bridge projects. Because data for these projects is tracked annually, in any given year there may not be an award for this type of project as can be seen from some of the MDTA data.

Regardless, the data will provide our customers with insights into how Maryland transportation projects compare to national averages. Benchmarks are sought to gauge how Maryland solutions and services compare with national averages as well as who is considered the best in this category. Based on year-to-year data comparisons, the goal is to identify ways to reduce costs to the citizens of Maryland.

## PERFORMANCE MEASURE 4.4A

### Average Cost of Common Transportation Solutions and Services

Chart 4.4A.1: Minor Road Preservation Cost FY2014-FY2016

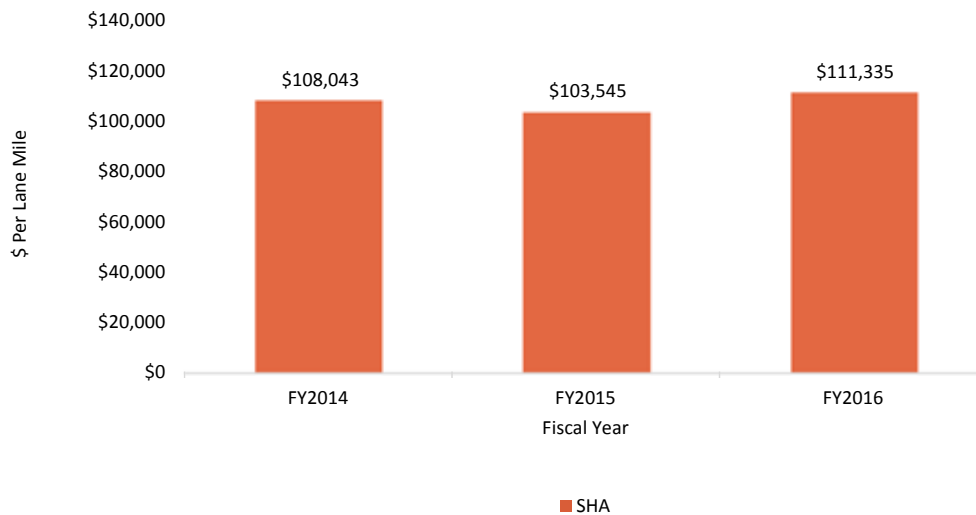
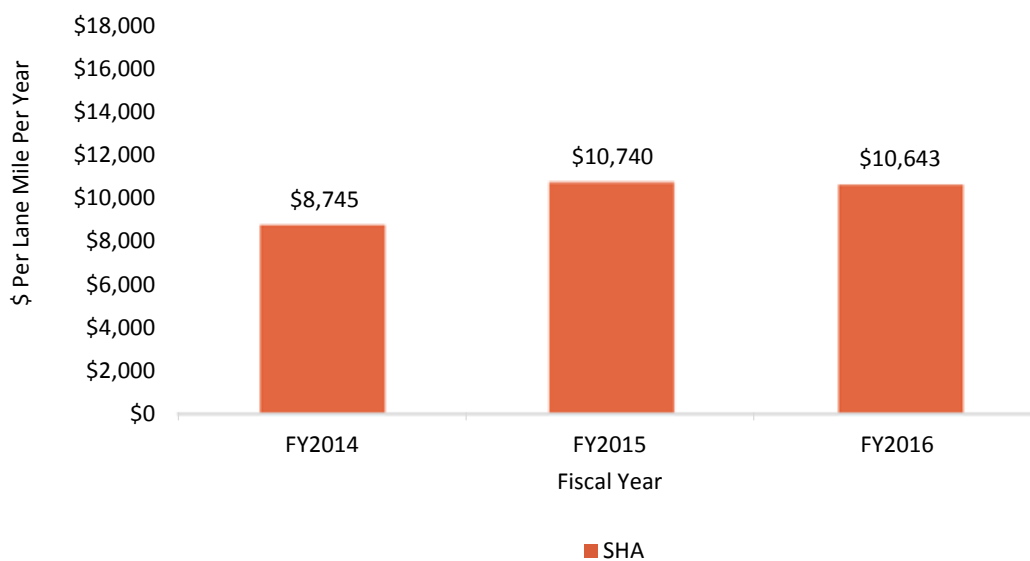


Chart 4.4A.2: Minor Road Preservation Life Cycle Cost FY2014-FY2016



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## PERFORMANCE MEASURE 4.4B

### Average Cost of Common Transportation Solutions and Services

Chart 4.4B.1: Major Road Preservation Cost FY2014-FY2016

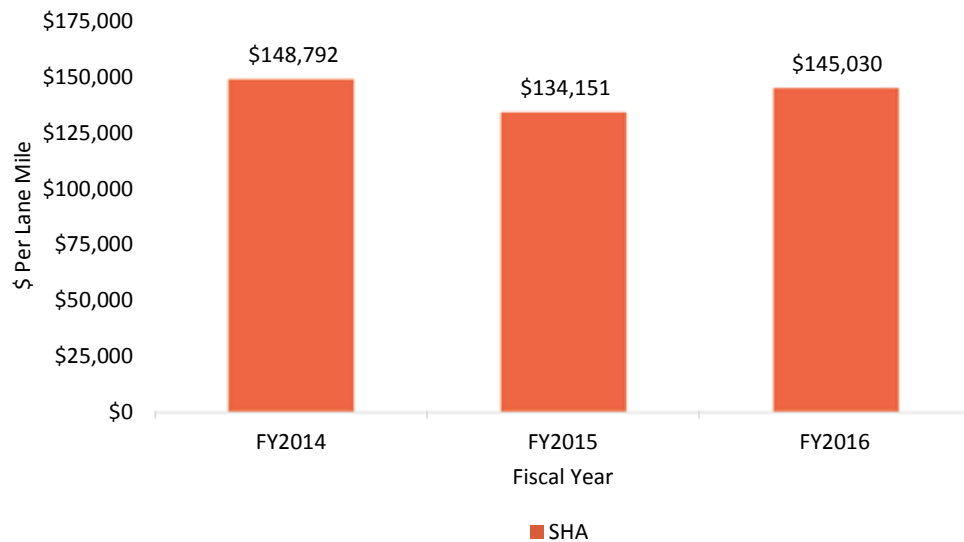
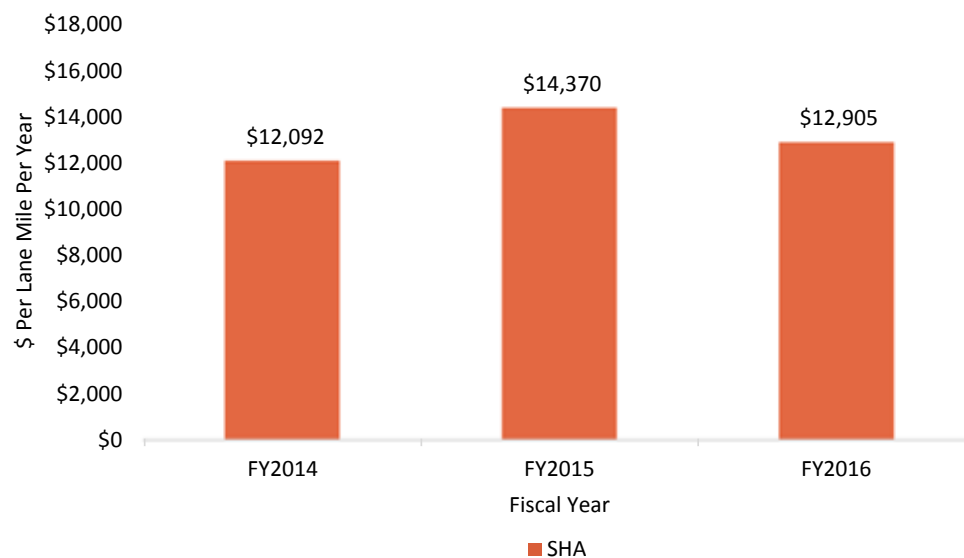


Chart 4.4B.2: Major Road Preservation Life Cycle Cost FY2014-FY2016



## PERFORMANCE MEASURE 4.4C

### Average Cost of Common Transportation Solutions and Services

Chart 4.4C.1: Interstate Preservation Cost FY2014-FY2016

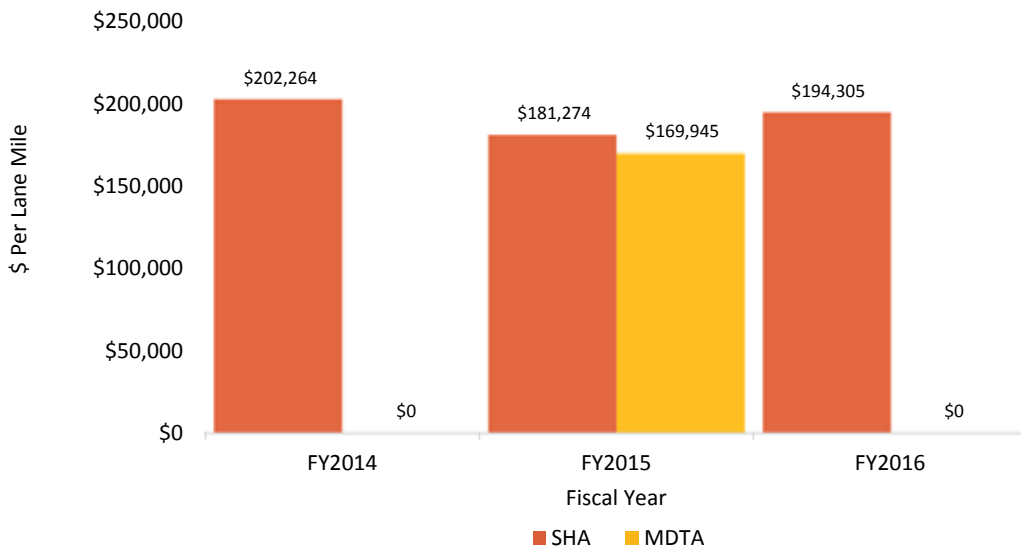
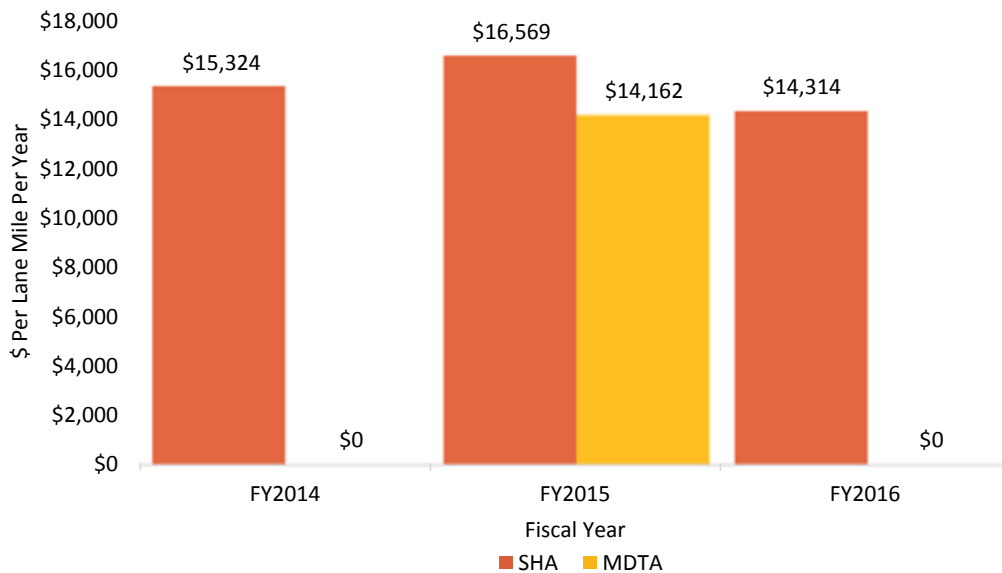


Chart 4.4C.2: Minor Road Preservation Life Cycle Cost FY2014-FY2016



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## PERFORMANCE MEASURE 4.4D AND E

### Average Cost of Common Transportation Solutions and Services

Chart 4.4D.1: Average Bridge Replacement Cost FY2015-FY2017

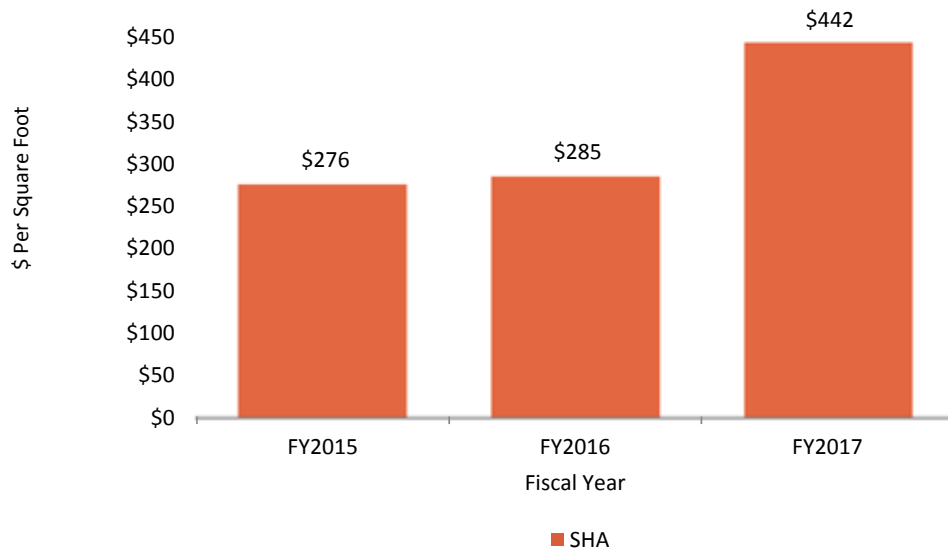
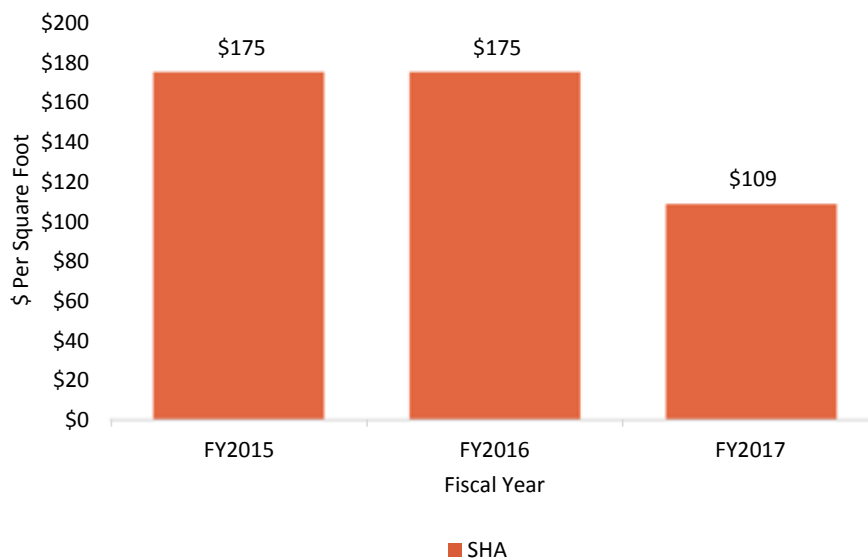


Chart 4.4E.1: Average Bridge Redecking Cost FY2015-FY2017





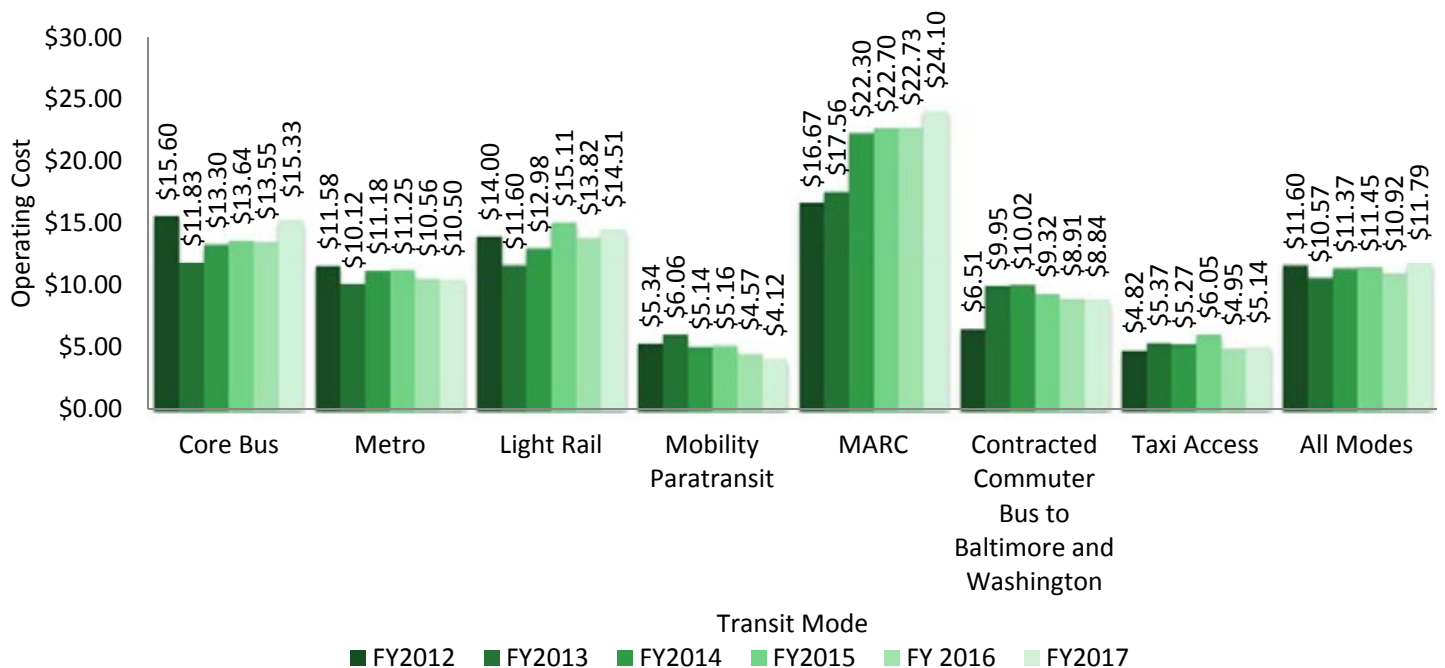
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## PERFORMANCE MEASURE 4.4F

### Average Cost of Common Transportation Solutions: Operating Cost per Passenger Trip (MTA)

Operating cost per passenger trip is an indication of how effectively and efficiently the MTA is producing service given the operating costs. Ideally, a lower operating cost per passenger trip demonstrates the ability to move passengers in an efficient and effective manner.

**Chart 4.4F.1: Operating Cost Per Revenue Vehicle Mile FY2012-FY2017**



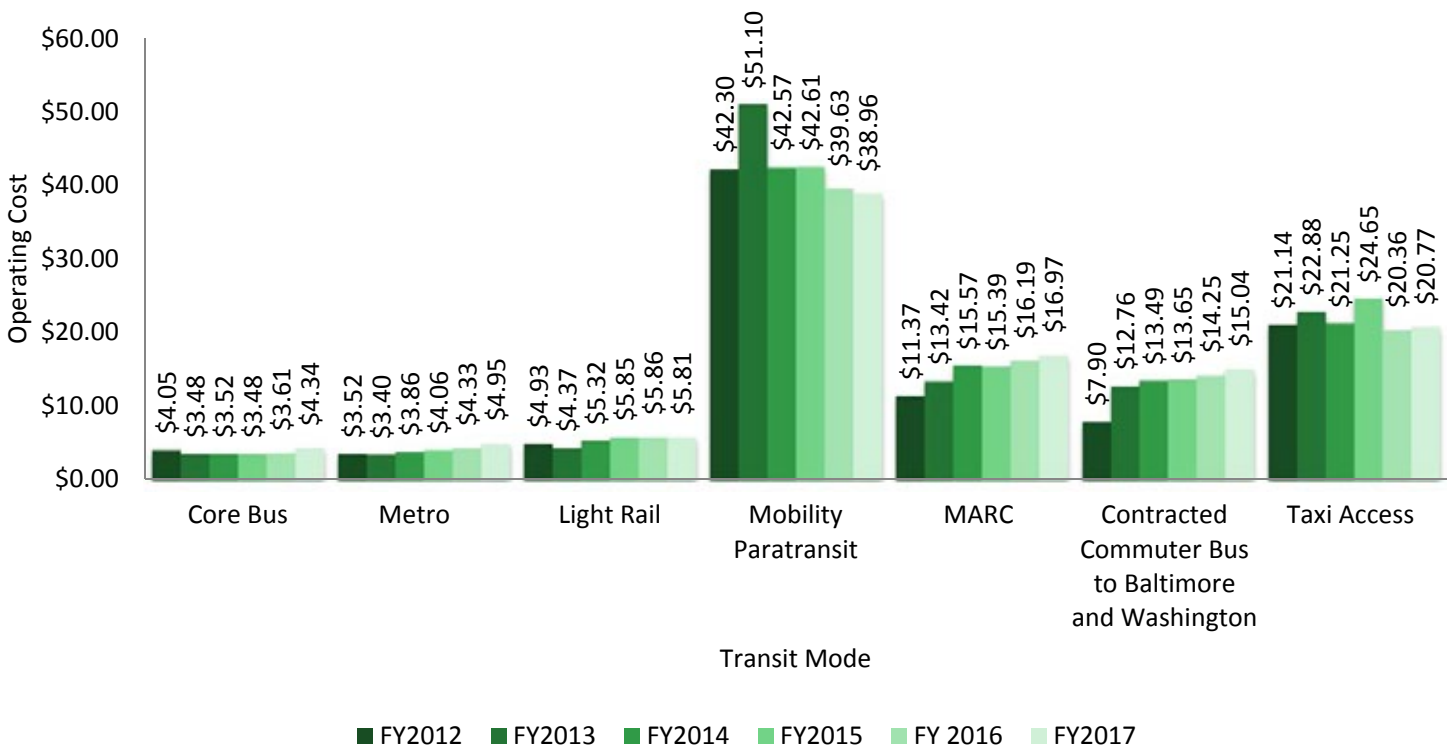
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## PERFORMANCE MEASURE 4.4G

### Average Cost of Common Transportation Solutions: Operating Cost per Revenue Vehicle Mile (MTA)

Operating cost per revenue vehicle mile is an indication of the cost efficiency of the MTA in producing service given operating costs and scheduling of service. Ideally, when a transit vehicle is in operation, the goal is to be in revenue service vs. deadhead or repair. A lower operating cost per revenue vehicle mile demonstrates an efficient, well scheduled service and maintained fleet.

Chart 4.4G.1: Operating Cost Per Passenger Trip FY2012-FY2017



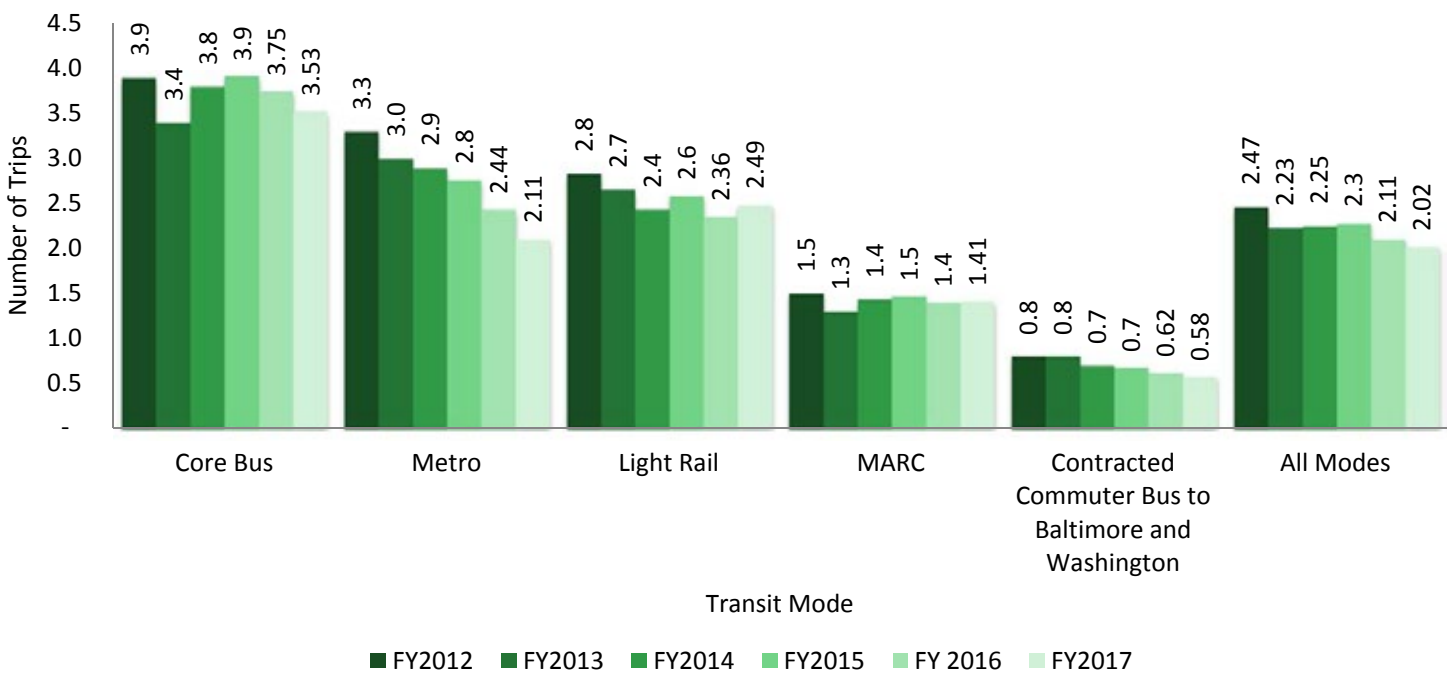
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## PERFORMANCE MEASURE 4.4H

### Average Cost of Common Transportation Solutions: Passenger Trip per Revenue Vehicle Mile (MTA)

Passenger trips per revenue vehicle mile demonstrates the effectiveness of the transit's operating schedule showing scheduled service in such a way as to carry as many passengers as practicable without overcrowding the service.

**Chart 4.4H.1: Passenger Trips Per Revenue Vehicle Mile FY2012-FY2017**



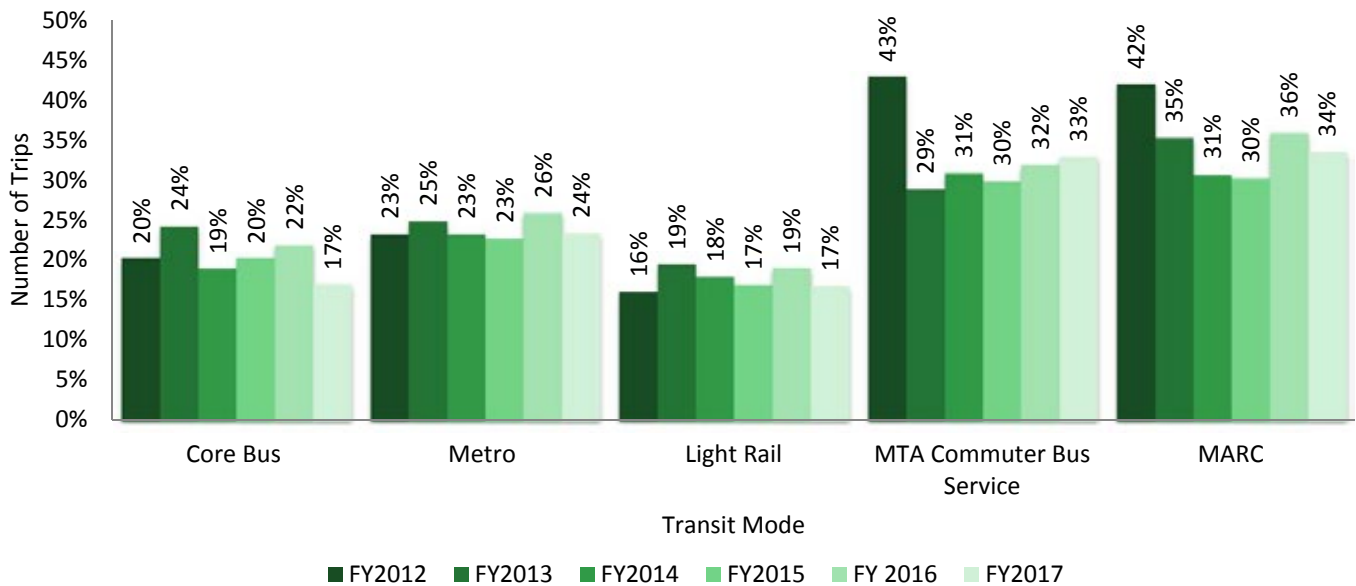
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## PERFORMANCE MEASURE 4.4I

### Average Cost of Common Transportation Solutions: Farebox Recovery Ratio (MTA)

Farebox recovery ratio measures the percent of operating costs recovered through fares. Various factors affect the recovered operating costs such as fare price, ridership levels, and operating costs such as labor, fuel, and repair. State law mandates that MTA achieve a 35 percent Farebox Recovery Ratio.

Chart 4.4I.1: Farebox Recovery Ratio FY2012-FY2017



## PERFORMANCE MEASURE 4.4J

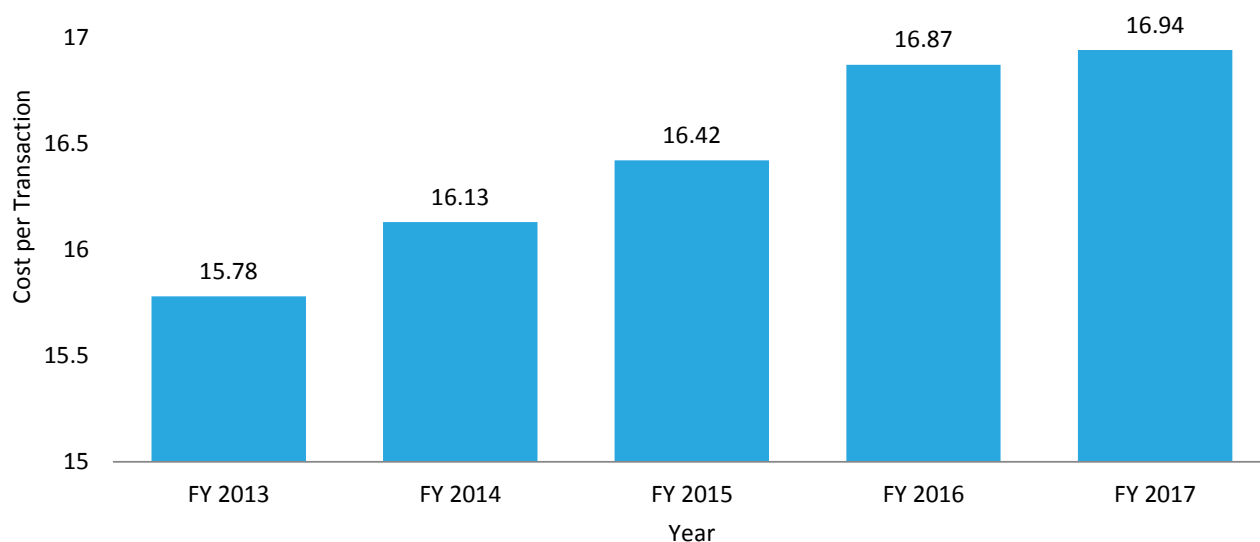
### Average Cost of Common Transportation Solutions: Cost per Transaction (MVA)

Cost per transaction is based on the total operating expense compared to the total number of customer transactions. The operating expense is inclusive of salaries and wages, including overtime. Operating expenses also include MVA costs to provide driver's licensing, vehicle registration and titling customer services.

The ways in which MVA provides its services to its customers is a factor in the costs per transaction. For example, IT system enhancements (introducing alternative service delivery options to customers) offer higher levels of convenience and customer satisfaction. Recent service improvements include the ability for a customer's vision provider to submit vision exam results electronically to MVA for licensing purposes, thus allowing some customers to renew their license via the web in lieu of standing in a license renewal line. Other such innovative service delivery using computer-based methods are included in the costs per transaction.

Trends in cost per transaction can vary when new technologies are implemented. Initial technology rollout costs tend to create a spike in costs, but after implementation, cost per transaction usually stabilizes and then declines. Other factors included in cost per transaction include the number of transactions required to complete customer service or product requests; increases in vehicle sales, which can be more costly to process (full titling transactions); and changes in driver's licensing laws requiring more time-consuming customer identification screening.

**Chart 4.4J.1: MVA Cost Per Transaction FY2013-FY2017**



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